

WHAT IS CLAIMED IS:

1. A monitoring device for vehicles, said monitoring device comprising:  
a housing (17);  
at least one mirror glass (1, 12) arranged in said housing (17) so as  
to have a front side facing an observer;  
said at least one mirror glass (1, 12) comprising a reflective layer (5)  
being reflective in the visible spectral range of light;  
at least one camera (10) arranged behind said reflective layer (5) in  
a viewing direction viewed from said front side.

2. The monitoring device according to claim 1, wherein said reflective  
layer (5) is selected from the group consisting of an interference reflective layer, a  
chromium reflective layer, a titanium reflective layer, and a titanium-chromium  
reflective layer.

3. The monitoring device according to claim 1, wherein said mirror glass  
(1) is an electrochromic mirror glass or a conventional mirror glass.

4. The monitoring device according to claim 3, wherein said  
electrochromic mirror glass has an electrochromic layer and wherein said reflective  
layer is arranged behind said electrochromic layer in said viewing direction.

5. The monitoring device according to claim 1, comprising an auxiliary  
lighting unit (11) configured to provide additional light for said at least one camera  
(10).

6. The monitoring device according to claim 5, wherein said auxiliary lighting unit (11) emits light of a wavelength able to pass through said reflective layer (5).

7. The monitoring device according to claim 5, wherein said auxiliary lighting unit (11) emits light having a wavelength outside of the visible spectral range of light.

8. The monitoring device according to claim 5, wherein said auxiliary lighting unit (11) comprises light-emitting diodes.

9. The monitoring device according to claim 8, wherein said light emitting diodes emit light in the infrared range.

10. The monitoring device according to claim 5, wherein said auxiliary lighting unit (11) is arranged behind said reflective layer (5) in said viewing direction.

11. The monitoring device according to claim 5, wherein said auxiliary lighting unit (11) comprises light-emitting diodes arranged in a matrix of rows and columns.

12. The monitoring device according to claim 5, wherein said housing (17) and said mirror glass (1, 12) form an interior rearview mirror (16), wherein said housing (17) has a rim (18), and wherein said auxiliary lighting unit (11) comprises light-emitting diodes (11) arranged on said rim (18) of said housing (17).

13. The monitoring device according to claim 12, wherein said rim (18) is comprised of a material that is opaque to the human eye.

14. The monitoring device according to claim 1, comprising an image-transmitting fiber bundle (19) connected to said at least one camera (10).

15. The monitoring device according to claim 14, wherein said fiber bundle (19) has an optical head (20) resting against a backside of said mirror glass (1, 12).

16. The monitoring device according to claim 14, wherein said fiber bundle (19) has an optical head (20) and is arranged together with said optical head (20) on said rim (18).

17. The monitoring device according to claim 1, wherein said at least one camera (10) comprises a low light level intensifier (22).

18. The monitoring device according to claim 17, wherein said low light level intensifier (22) is arranged behind said mirror glass (1, 12) in said viewing direction.